

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1-2. (canceled)

3. (currently amended) ~~Injection moulding device according to claim 2,~~ Injection moulding device (1) comprising a mould body (2, 5) having a cavity (4), an elongated nozzle (3) seated in the cavity (4), a valve pin (11) coaxially in a channel of the nozzle and actuating means (15) connected to the valve pin for axially displacing the valve pin in the nozzle, the valve pin exiting the channel via a bore at the upper end (12) of the nozzle and being guided by a bush (13) in said bore, characterized in that cooling means (14, 18) are associated with said bush (13),

wherein the bush (13) projects above a surface of the mould body (2), the cooling means comprising a cooling plate (14), spaced away from the mould body, and associated with the upper end of the bush (13), and

wherein the cooling plate (14) is supported on the mould body via a refractive spacer member (52).

4. (currently amended) ~~Injection moulding device (1) according to claim 1,~~ Injection moulding device (1) comprising a

mould body (2, 5) having a cavity (4), an elongated nozzle (3) seated in the cavity (4), a valve pin (11) coaxially in a channel of the nozzle and actuating means (15) connected to the valve pin for axially displacing the valve pin in the nozzle, the valve pin exiting the channel via a bore at the upper end (12) of the nozzle and being guided by a bush (13) in said bore, characterized in that cooling means (14, 18) are associated with said bush (13),

the bush being seated in a cavity (21) in the mould body (2) at a distance from the sidewalls of the cavity (21), the bush having a lower shoulder (24), a clamping ring (22) being screwed into the cavity (21) and ~~engages~~ engaging with the shoulder (22) on the bush, an inner wall (25) of the clamping ring (22) being spaced away from the sidewall of the bush (13).

5. (currently amended) Injection moulding device (1) according to claim [[1]] 3, wherein the actuator means (15) comprises a cylinder (15) that is placed above the valve pin (11), coaxial therewith, a cylinder housing (30) being detachably coupled to a cooling plate (14) having a cooling channel (18) located below the cylinder (15) and said cooling plate having a bore (47) accommodating the upper end of the bush (13).

6. (currently amended) Manifold unit (2) for use in an injection moulding device according to claim [[1]] 3, comprising a central channel, a branching channel (21) ~~and at least one~~ with

the elongated nozzle (3) connected to the branching channel, the cooling plate (14) being supported on the manifold body (2) via a refractive spacer member (52), a cylinder being placed above the valve pin (11), coaxial therewith, the cylinder housing (30) being coupled to the cooling plate, the cooling plate (14) comprising a cooling channel (18) located below the cylinder (15) and said cooling plate having a bore (47) accommodating the upper end of the bush (13).

7. (new) Injection moulding device (1) comprising a mould body (2, 5) having a cavity (4), an elongated nozzle (3) seated in the cavity (4), a valve pin (11) coaxially in a channel of the nozzle and actuating means (15) connected to the valve pin for axially displacing the valve pin in the nozzle, the valve pin exiting the channel via a bore at the upper end (12) of the nozzle and being guided by a bush (13) in said bore, wherein the bush (13) passes through the cooling means (14, 18) and the cooling means (14, 18) engage around the bush (13).

8. (new) Injection moulding device (1) according to claim 7, wherein,

the bush (13) projects above a surface of the mould body (2), and

the cooling means comprises a cooling plate (14), spaced away from the mould body, and associated with the upper end of the bush (13).

9. (new) Injection moulding device (1) according to claim 8, wherein the cooling plate (14) forms a base plate on which the actuating means (15) are placed.

10. (new) Injection moulding device according to claim 8, wherein the cooling plate (14) is supported on the mould body via a refractive spacer member (52).

11. (new) Injection moulding device according to claim 7, wherein the cooling plate (14) is supported on the mould body via a refractive spacer member (52).

12. (new) Injection moulding device (1) according to claim 7, the bush being seated in a cavity (21) in the mould body (2) at a distance from the sidewalls of the cavity (21), the bush having a lower shoulder (24), a clamping ring (22) being screwed into the cavity (21) and engaging with the shoulder (22) on the bush, an inner wall (25) of the clamping ring (22) being spaced away from the sidewall of the bush (13).

13. (new) Injection moulding device (1) according to claim 8, the bush being seated in a cavity (21) in the mould body (2) at a distance from the sidewalls of the cavity (21), the bush having a lower shoulder (24), a clamping ring (22) being screwed into the cavity (21) and engaging with the shoulder (22) on the bush, an inner wall (25) of the clamping ring (22) being spaced away from the sidewall of the bush (13).

14. (new) Injection moulding device (1) according to claim 9, the bush being seated in a cavity (21) in the mould body (2) at a distance from the sidewalls of the cavity (21), the bush having a lower shoulder (24), a clamping ring (22) being screwed into the cavity (21) and engaging with the shoulder (22) on the bush, an inner wall (25) of the clamping ring (22) being spaced away from the sidewall of the bush (13).

15. (new) Injection moulding device (1) according to claim 10, the bush being seated in a cavity (21) in the mould body (2) at a distance from the sidewalls of the cavity (21), the bush having a lower shoulder (24), a clamping ring (22) being screwed into the cavity (21) and engaging with the shoulder (22) on the bush, an inner wall (25) of the clamping ring (22) being spaced away from the sidewall of the bush (13).

16. (new) Injection moulding device (1) according to claim 11, the bush being seated in a cavity (21) in the mould body (2) at a distance from the sidewalls of the cavity (21), the bush having a lower shoulder (24), a clamping ring (22) being screwed into the cavity (21) and engaging with the shoulder (22) on the bush, an inner wall (25) of the clamping ring (22) being spaced away from the sidewall of the bush (13).

17. (new) Injection moulding device (1) according to claim 7, wherein the actuator means (15) comprises a cylinder (15) that is placed above the valve pin (11), coaxial therewith,

a cylinder housing (30) being detachably coupled to a cooling plate (14) having a cooling channel (18) located below the cylinder (15) and said cooling plate having a bore (47) accommodating the upper end of the bush (13).

18. (new) Injection moulding device (1) according to claim 8, wherein the actuator means (15) comprises a cylinder (15) that is placed above the valve pin (11), coaxial therewith, a cylinder housing (30) being detachably coupled to a cooling plate (14) having a cooling channel (18) located below the cylinder (15) and said cooling plate having a bore (47) accommodating the upper end of the bush (13).

19. (new) Injection moulding device (1) according to claim 9, wherein the actuator means (15) comprises a cylinder (15) that is placed above the valve pin (11), coaxial therewith, a cylinder housing (30) being detachably coupled to a cooling plate (14) having a cooling channel (18) located below the cylinder (15) and said cooling plate having a bore (47) accommodating the upper end of the bush (13).

20. (new) Injection moulding device (1) according to claim 10, wherein the actuator means (15) comprises a cylinder (15) that is placed above the valve pin (11), coaxial therewith, a cylinder housing (30) being detachably coupled to a cooling plate (14) having a cooling channel (18) located below the

cylinder (15) and said cooling plate having a bore (47) accommodating the upper end of the bush (13).

21. (new) Injection moulding device (1) according to claim 12, wherein the actuator means (15) comprises a cylinder (15) that is placed above the valve pin (11), coaxial therewith, a cylinder housing (30) being detachably coupled to a cooling plate (14) having a cooling channel (18) located below the cylinder (15) and said cooling plate having a bore (47) accommodating the upper end of the bush (13).

22. (new) Manifold unit (2) for use in an injection moulding device according to claim 7, comprising a central channel, a branching channel (21) with the elongated nozzle (3) connected to the branching channel, the cooling plate (14) being supported on the manifold body (2) via a refractive spacer member (52), a cylinder being placed above the valve pin (11), coaxial therewith, the cylinder housing (30) being coupled to the cooling plate, the cooling plate (14) comprising a cooling channel (18) located below the cylinder (15) and said cooling plate having a bore (47) accommodating the upper end of the bush (13).